CLAIMS

1. Calendar mechanism for displaying the date and the day of the week in a timepiece, including a date indicator (24) in the form of an internally toothed crown, means (10, 76; 10, 80) for driving said date indicator including a first drive wheel (76; 80) having an external toothing (78; 82) so as to be able to be driven about an axis of rotation by a wheel set (10) secured to an hour wheel (2) of said timepiece and said toothing including a prominent tooth (78"; 82"), longer than the others, which abuts against a tooth of the inner toothing (44) of the date indicator to move it forward one day in a time interval located around a determined time of the day, said mechanism also including a day of the week indicator (20), means (10, 76', 22; 10, 80', 22) for driving said day of the week indicator to move it forward one day during said time interval and means (50, 52) for positioning said indicators (24, 20) and said mechanism being characterised in that said means for driving the day of the week indicator include a second drive wheel (76'; 80') fitted with an external toothing (78'; 82), superposed and coaxial to the first drive wheel (76; 80) and in that said first and second drive wheels (76, 76'; 80, 80') have the same diameter and the same even number of teeth (78, 78'; 82, 82') and are driven by the same wheel set (10) secured to said hour wheel (2).

2. Calendar mechanism according to claim 1, characterised in that said drive wheel is formed by a pinion (10) secured to a pipe (4) of said hour wheel (2) and including a number of teeth (12) equal to half of that of said first and second drive wheels (76, 76'; 80, 80')

3. Calendar mechanism according to claim 2, characterised in that said day of the week indicator is a disc (20) coaxial to said date indicator (24) and in that said means for driving said disc include a day star-wheel (22) secured to said disc and driven by said second drive wheel (76'; 80').

4. Calendar mechanism according to claim 3, characterised in that said second drive wheel (76'; 80') pivots on a fixed arbour (14) and includes a hub (106) via which it is mounted on said arbour and which is connected to a crown (108) carrying said teeth (78'; 82) and an elastic arm (112) substantially in the shape of an arc of a circle, attached at least indirectly to said hub and partially surrounding the latter, and in that said elastic arm has at its free end a first drive finger (114) substantially perpendicular to the plane of said second wheel which is engaged between the teeth (34) of said day star-wheel (22) to move said day of the week indicator disc (20) forward one day of the week when said calendar mechanism is operating normally.

5. Calendar mechanism according to claim 3, characterised in that the day of the week indicator disc (20) carries alternately abbreviations of the names of the days of the week in two different languages, in that said day star-wheel (22) includes fourteen teeth (34), in that said elastic arm (112) has a second drive finger (116) also substantially perpendicular to the plane of said second drive wheel (76'; 80') and in that said second drive finger (116) is located in relation to the first finger (114) such that said drive fingers act one after the other on two successive teeth (34) of said day star-wheel in order to rotate said day of the week disc twice by a fourteenth of a revolution in the same direction during said time interval located around a determined time of the day.

6. Calendar mechanism according to claim 4, characterised in that said elastic arm (112) also carries a substantially radial support finger (118) located in the plane of said second drive wheel (80) and having one end (120) which abuts against said crown (108) of said second drive wheel (80') when said elastic arm is deformed in the direction of said crown practically at the moment when said deformation is sufficient to allow said first drive finger (114) to move said day of the week indicator disc (20) forward one day, against said positioning means (52).

7. Calendar mechanism according to claim 4, characterised in that said elastic arm (112), said first drive finger (114), said teeth (34) of the day of the week star-wheel (22) and said means (52) for positioning said star-wheel are designed such that said first drive finger slides over one of said teeth (34) without any significant deformation of said elastic arm (112), in the direction of said hub (106) and owing to a natural elastic deformation of said crown (108) so that said day of the week indication is not altered when said pinion (10) rotates in an opposite direction to that which allows it to drive said second drive wheel (76'; 80') and said day star-wheel in their normal rotational directions (F1, respectively, F2).

8. Calendar mechanism according to claim 2, characterised in that said first drive wheel (76) pivots on a fixed arbour (14) and includes a hub via which it is mounted on said arbour and which is connected to a crown carrying said teeth (78) by a radial arm.

9. Calendar mechanism according to claim 8, characterised in that said prominent tooth (78") of the first drive wheel (76) has a substantially radial front flank like the other teeth (78) of said wheel (76) which acts each time on a tooth (44) of said date crown (24) to move forward the date indication one day when the mechanism is operating normally and a back flank which, at the end of said prominent tooth provided for engaging between the teeth (44) of said date crown, has an oblique face of smaller inclination to form an acute angle with said front flank and to allow said first drive

wheel (76), which is then elastically deformed, to rotate in the opposite direction to its normal rotational direction (F1) without altering the date indication, when it is driven in the opposite direction by said pinion (10).

10. Calendar mechanism according to claim 2, characterised in that said first drive wheel (80) pivots on a fixed arbour (14) and includes a hub (84) from which extend a wide radial arm (86), an elastically deformable arm (88) substantially in the shape of an arc of a circle, starting from a free end of said arm (86) and extending in the normal rotational direction (F1) of said first drive wheel, said elastically deformable arm surrounding most of said hub (84) to be attached via the interior and a substantially radial and rigid connecting part (90) to a crown (92) which carries said teeth (82); said mechanism being also characterised in that said prominent tooth (82") of the first drive wheel (80) is separated from the tooth (82) that precedes it when said wheel rotates in its normal rotational direction (F1) by a cut (94) of said crown (92); and in that, when said wheel rotates in the normal direction and when said prominent tooth (82") comes into contact with a tooth (44) of said date crown (24) to drive the latter, said prominent tooth starts by remaining still while said elastically deformable arm (88) tightens in the direction which brings it closer to said hub (84) and that the width of said cut (94) increases, until a front flank (102) of said connecting part (90) comes into contact with a back flank (104) of said radial arm (86) and said prominent tooth (82") comes into contact with the tooth (82) which precedes it, after which said prominent tooth drives said date crown to move it forward one day and then allow said drive wheel (80) to return to its original form.

11. Calendar mechanism according to claim 10, characterised in that said prominent tooth (82") of the first drive wheel (80) has a substantially radial front flank (96) like the other teeth (82) to move the date indication forward one day when the mechanism is operating normally and a back flank (98) which, at the end of said prominent tooth provided for engaging between the teeth (44) of said date crown (24), has an oblique face (100) of smaller inclination to form an acute angle with said front flank (96) and in that when said first drive wheel (80) is driven in the opposite direction to its normal rotational direction (F1) and when said oblique face (100) of the prominent tooth (82") comes into contact with a tooth (44) of the date crown (24), this tooth (44) slides over said oblique face which causes a slight tension in the elastic arm (88) and a slight decrease in the width of said cut (94) of the crown (92) of said first drive wheel (80) but without altering the date indication.

12. Calendar mechanism according to claim 1, characterised in that, when the mechanism is operating normally, the driving of the date indicator (24) is phase shifted in time with respect to that of the day of the week indicator (20), so that the

torques necessary for driving said indicators do not reach their maximum values practically at the same time and prevent any malfunction of the timepiece of which they form part.